

Appl. No. 09/837,020
Amdt. Dated September 23, 2003
Reply to Office Action of August 15, 2003

• • REMARKS/ ARGUMENTS • •

In response to applicants' Brief on Appeal filed June 9, 2003, the Examiner issued a new Final Rejection of the application.

The Examiner did not indicate the status of applicants' Appeal.

It is assumed that the Examiner has unilaterally withdrawn applicants' appeal.

Accordingly, a new Notice of Appeal is being submitted herewith.

The Official Action of August 15, 2003 has been thoroughly studied. Accordingly, the changes presented herein for the application, considered together with the following remarks, are believed to be sufficient to place the application into condition for allowance.

By the present amendment, the claims have been amended throughout to recite or refer to "at least one seed."

This change to the claims addresses and overcome the outstanding rejection of the claims under 35 U.S.C. §112, second paragraph.

Entry of the changes to the claims is respectfully requested.

Claims 1-13 are pending in this application.

On page 2 of the Official Action the Examiner rejected claims 1-13 under 35 U.S.C. §112, second paragraph. Under this rejection the Examiner noted that claim 1 recited "encapsulating one

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plant seed or a plurality of plant seeds,” but the claims later only refer to “seeds” rather than “the one plant seed or the plant seeds.”

In response to this rejection, as indicated above, the claims have been amended throughout to recite or refer to “at least one seed.”

Claims 1-6 and 13 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,701,700 to Kohno et al. Skarpaas, *Population Viability Analysis for the Oyster Plant (Mertensia maritime) in the Oslofjord Region*.

Claims 7-12 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,701,700 to Kohno et al. “as applied to claim 1” and further in view of U.S. Patent No. 5,525,131 to Asano.

For the reasons set forth below, it is submitted that all of the pending claims are allowable over the prior art and therefore, each of the outstanding rejections of the claims should properly be withdrawn.

Favorable reconsideration by the Examiner is earnestly solicited.

The Examiner has relied upon Kohno et al as teaching:

...a method of encapsulating one plant seed or a plurality of plant seeds in an aqueous gel capsule (Kohno Col. 1 line 1-20); refrigerating the plant seeds under the condition that the plant seeds do not germinate (Kohno Col. 4 line 39); and sowing the plant seeds (Kohno Col. 1 line 21-25 and Col 3 line 27-36).

The Examiner concedes that “Kohno et al does not explicitly teach that the method prevents defective germination or growth of a plant.”

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The Examiner as accordingly relied upon Skarpaas as teaching that: "a cold period is necessary to break seed dormancy and that prolonged cold treatment enhances germination."

Based upon the teachings of Kohno et al. and Skarpaas, the Examiner takes the position that:

...it would have been obvious....to modify the storage duration under cold temperatures through routine tests and experimentation to a length that enhances germination as taught by Skarpaas."

Kohno et al. is only interested in storing gel-coated seeds in a manner that does not adversely affect the yield and handling properties of gel-coated seeds.

It is important to note that a particular problem addressed and solved by Kohno et al. was that if gel-coated seeds were stored under the same general conditions used for non-coated seeds, the gel coating loses water and becomes hardened. As a result, it becomes difficult for a bud or root sprouted from the seed to pierce through the coating. (Column 1, lines 25-32).

Kohno et al. utilizes an aqueous gel coating composition that is rendered water-insoluble by metal ions. In order to ensure that the storage solution does not adversely affect the gel coating, the storage solution is provided with an osmotic pressure by adding salts listed at column 3, lines 1-9 therein.

In confirming that the storage solutions does not adversely effect the yield of the gel-coated seeds, Kohno et al. conducted comparative tests and concluded that:

The gel-coated seeds thus stored exhibit equal rate of germination and rate of sticking out to those of the gel-coated seeds immediately after preparation. (Column 3, lines 51-54).

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The fact the Kohno et al. conducted comparative tests and concluded that the gel-coated seeds that were stored exhibited a rate of germination that was "equal" to that of non-stored seeds establishes that the process of Kohno et al. does not inherently improve germination of the gel-coated seeds.

Moreover, the fact that Kohno et al. conducted comparative tests and concluded that the germination rates of stored and non-stored seeds was "equal" is evidence that appellants' invention is unexpected over the teachings of Kohno et al. and therefore clearly unobvious.

The Examiner has conceded that "Kohno et al does not explicitly state that the method prevents defective germination or growth of a plant" and has accordingly relied upon Skarpaas as teaching that a cold period is necessary to break seed dormancy and that prolonged cold treatment enhances germination.

Skarpaas is directed to a study of a specific, herbaceous perennial plant (*Mertensia maritime* "oyster plant") that drops "nutlets" into the ocean so that the nutlets float for a very long period of time (several months) in 3% salt water. According to a standard dictionary definition (See www.webster.com) a "nutlet" is: "1 a : a small nut b : a small fruit similar to a nut" A "nut" is "1 a (1) : a hard-shelled dry fruit or seed with a separable rind or shell and interior kernel."

Skarpaas is specifically interested in studying the manner in which the oyster plant reproduces and disperses.

In the working examples, Kohno et al teaches the use of radish seeds.

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It is submitted that Kohno et al.'s radish seed is not at all comparable to the nutlet of Skarpaas or to any nut or nutlet since radish seeds do not have hard shells and separable interior kernels.

There is no nexus between the radish seed of Kohno et al. and the nutlet of Skarpaas which supports the Examiner's assumption that the effect of allowing nutlets to float for very long periods of time (several months) in the ocean (3% salt water) would be the same if applied to radish seeds.

The only connection that has lead the Examiner to consider combining the diverse teachings of Kohno et al. and Skarpaas is appellants' own disclosure. Absent such improper hindsight, one skilled in the art would never consider applying the teachings of Skarpaas to Kohno et al.

Certainly the hard, and relatively thick, shells of nuts and nutlets of plants which are native to the beaches of southern Norway are more resistance to that environment than the radish seeds of Kohno et al., so that it cannot be merely assumed that each would be affected in a similar manner. There is simply no basis within the teachings of these references that supports such an assumption.

While it is true that any determination of obviousness involves aspects of hindsight inasmuch as one must always compare the claimed invention and its solution with the most relevant prior art before the assessment of the "inventive step" in order to objectively determine the problem to be solved by the claimed invention, it is impossible to rely upon hindsight to reconstruct an appellant's claimed invention by combining teachings from prior art references, which prior art references themselves do not provide any motivation or suggestion for the combination.

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That is, it is impressible to rely upon an appellant's own disclosure as a blueprint to reconstruct an appellant's claimed invention from isolated teachings found in the prior art.

Obviousness has to be based upon what the prior art references themselves teach or suggest, absent any reliance at all upon an appellant's disclosure.

An Examiner cannot rely upon the benefit of hindsight as a substitute for some motivation or suggestion found within the teachings of the prior art that supports the obviousness of their combination.

In light of the above, it is urged that the teachings of Skarpaas are not at all related to the teachings Kohno et al., because radish seeds are not comparable to the nutlet of Skarpaas or any nut or nutlet since radish seeds do not have hard shells and separable interior kernels.

Furthermore, one would not consider or envision having radish seeds float for very long periods of time (several months) in the ocean (3% salt water) off southern Norway upon reading the teachings of Skarpaas, much less expect any beneficial results to be achieved thereby.

Kohno et al. teaches that the storage treatment discussed at beginning at column 3, line 28, *et seq.* produce seeds that have a germination rate that is "equal" to the germination rate of seeds that are not stored. (See column 3, lines 51-54) This echoes the statement at column 2, lines 53-56 that there is substantially no change in the properties of the seeds.

In actuality it is submitted that Kohno et al. fails to teach any benefit in germination caused by the storage process, even though Kohno et al. conducted comparative tests to determined effect on germination.

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While Skarpaas teaches that a cold period is needed to break dormancy, the teachings of Skarpaas are limited to the oyster plant (*Mertensia maritime*).

For the reasons set forth above, the teaching of Skarpaas are not germane to Kohno et al.

In the *Response to Arguments* section on page 5 of the Official Action the Examiner states:

The teachings presented by Kohno are applicable to many different seeds. The abstract, the specification, and the claims of Kohno all refer to seeds in a general sense.

The Examiner further states that:

Skarpaas presents general knowledge in the field of seeds. The seed of Skarpaas and the seeds of Kohno are merely alternate equivalent seeds. Although the seeds are alternative equivalents Skarpaas was not a cited reference with regard to seed type but merely to illustrate the effect of temperature on seeds in general

The Examiner's position is that the seed taught by Kohno are "alternative equivalent[s]" to the seed of Skarpaas.

The undersigned does not understand the Examiner's position. The Examiner is requested to explain the relationship between "equivalent" seeds and "non-equivalent" seeds. The undersigned is familiar with the term and concept of "functional equivalents," but cannot imagine how it applies to seeds, particularly the seeds of Kohno and Skarpaas.

The only seed example taught by Kohno is radish seeds.

Skarpaas is limited only to seeds of the oyster plant (*Mertensia maritime*).

The seeds of the oyster plant are "nutlets" according to Skarpaas.

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It is not understood how the Examiner can conclude that the radish seeds of Kohno are "alternative equivalent[s]" to the nutlets of Skarpaas.

Applicants submit that radish seeds of Kohno are not "alternative equivalents" to the nutlets of Skarpaas, or at least not taught by the prior art to be "alternative equivalents."

As noted above, "nutlets" by definition are "a hard-shelled dry fruit or seed with a separable rind or shell and interior kernel."

It is submitted that the nutlets of Skarpaas are not "alternative equivalents" to the radish seeds of Kohno because the nutlet have a rind or shell which would preclude any advantage to gel-coating the nutlets.

Note, Kohno teach that gel-coating the seeds is used for seeds that are too small to be mechanically planted.

The "nutlets" of Skarpaas certainly are of a sufficient size that they do not have to be gel-coated to increase their size for mechanical planting.

Accordingly, the nutlets of Skarpaas are not "alternative equivalents" to the radish seeds of Kohno.

It further again submitted there is no basis for concluding that any benefit associated allowing nutlets of Skarpaas to float for very long periods of time (several months) in the ocean (3% salt water) would be the same if applied to radish seeds of Kohno.

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On page 6 and 7 of the Official Action the Examiner has cited several "additional" references which the Examiner states teach "it is notoriously old and well-known in the art that cold breaks seed dormancy."

The Skarpaas abstract is directed to the oyster plant and is not believed to be similar to the Skarpaas reference relied upon above.

The Rehman et al. reference involves a comparison between scarified and unscarified seeds

The Angelgrove Tree Seed Company reference discusses tree seeds and note that "stratification of tree seeds is not an exact science." This reference further teaches that it is important to thoroughly but "only slightly dampen" the vermiculite that the seeds were germinated and that it is better to "err on the side of a bit drier rather than wetter." These teachings seem to distinguish over Kohno and Skarpaas who use solutions to soak the seeds in.

Asano has been relied upon by the Examiner as teaching that it is well known to palletize a seed.

The Examiner takes the position that it would have been obvious to apply the gel coating of Kohno et al. to the pelletized seed of Asano for "the mechanized and economical distribution of the seeds in the field."

Contrary to the Examiner's position of obviousness, applicants note that it is very difficult to carry out a refrigeration treatment for a palletized seed prior to sowing, because palletized seeds formed with clay materials per Asano would tend to dissolve during the preservation in the cooling solutions of Kohno et al.

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On page 7 of the Official Action the Examiner states that Kohno teaches that the encapsulated seed is stored in a solution of metal ions and that "[t]he metal ion, also taught by Asano (Asano Col. 1 line 35-45), is a water proofing compound that would prevent the palletized seed from dissolving prematurely in the preservative solution."

The passage of Asano relied upon by the Examiner is directed to a proposed prior art process which Asano dismisses in the following paragraph.

As taught in the Examples, Asano sprays the seeds with a wetting agent and air dries the seeds rather than stores the coated seeds in a liquid solution.

Based upon the above distinctions between the prior art relied upon by the Examiner and the present invention, and the overall teachings of prior art, properly considered as a whole, it is respectfully submitted that the Examiner cannot rely upon the prior art as required under 35 U.S.C. §103 to establish a *prima facie* case of obviousness of applicants' claimed invention.

It is, therefore, submitted that any reliance upon prior art would be improper inasmuch as the prior art does not remotely anticipate, teach, suggest or render obvious the present invention.

It is submitted that the claims, as now amended, and the discussion contained herein clearly show that the claimed invention is novel and neither anticipated nor obvious over the teachings of the prior art and the outstanding rejection of the claims should hence be withdrawn.

Therefore, reconsideration and withdrawal of the outstanding rejection of the claims and an early allowance of the claims is believed to be in order.

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It is believed that the above represents a complete response to the Official Action and reconsideration is requested.

If upon consideration of the above, the Examiner should feel that there remain outstanding issues in the present application that could be resolved; the Examiner is invited to contact applicants' patent counsel at the telephone number given below to discuss such issues.

To the extent necessary, a petition for an extension of time under 37 CFR §1.136 is hereby made. Please charge the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 12-2136 and please credit any excess fees to such deposit account.

Respectfully submitted,



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